

Materials List for:

Self-Standing Electrochemical Set-up to Enrich Anode-respiring Bacteria On-Site

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Materials

Name	Company	Catalog Number	Comments
Carbon felt sheet	n/a	n/a	Used for anode and cathode
Titanium wire	The Nilaco Cooperation	TI-451485	Used to construct fuel cell system
Graphite epoxy	Electrolytica Inc.	n/a	Used to connect the electrodes and Ti wire
Drying oven	Yamato	DY300	bake the electrode to solidify conductive graphite epoxy
Digital multi meter	Fluke	616-1454	to check the ohmic value of resistance
Dissolved oxygen probe	Sper Science	# 850045	to check the oxygen concentration in the environments
Resistor	Sodial		Used to construct fuel cell system
Conducting wire	Pico	81141s	Used to construct fuel cell system
Voltmeter and Data logger	T&D corporation	VR-71	Used for data recording
Hydrogen Hexachloroplatinate(IV) Hexahydrate	wako	18497-13-7	Used for electroporation
Citric acid	Wako	038-06925	Used for electroporation
Sulfuric acid	Wako	192-04696	Used for electroporation
HCl	Wako	083-01095	Used for electrode washing
Glass cylinder	N/A	N/A	Custom-made, used as the electrochemical reactor
PTFE cover and base	N/A	N/A	Custom-made, used as a cover and a foundation of the electrochemical reactor
Buthyl rubber	N/A	N/A	Custom-made, inserted between each component of electrochemical reactor
Septa	GL Science	3007-16101	Used as an injection port of electrochemical reactor
Indium tin-doped oxide (ITO) electrode	GEOMATEC	No.0001	Used as a working electrode, 5Ω/sq
Ag/AgCl KCl saturated electrode	HOKUTO DENKO	HX-R5	Used as a reference electrode, Φ0.30mm
Platinum wire	The Nilaco Cooperation	PT-351325	Used as a counter electrode
NaHCO ₃	Wako	191-01305	Used for The Cedars Media (CMS)

CaCO ₃	Wako	030-00385	Used for CMS
NH ₄ Cl	Wako	011-03015	Used for CMS
MgCl ₂ • 6H ₂ O	Wako	135-00165	Used for CMS
NaOH	Wako	198-13765	Used for CMS
Na ₂ SO ₄	Wako	194-03355	Used for CMS
K ₂ HPO ₄	Wako	164-04295	Used for CMS
CABS	SANTA CRUZ	SC-285279	Used for CMS
Incubator	TOKYO RIKAKIKAI CO. LTD.	LTI-601SD	Used for precultivation
Autoclave machine	TOMY SEIKO CO. LTD.	LSX-500	Used for sterilization of the electrochemical reactor and the medium
Clean bench	SANYO	MCV-91BNF	Used to prevent the contamination of the electrochemical reactor and the medium with other microbes
Centrifuge separator	Eppendorf	5430R	Rotational speed upto 6000×g is required
Nitrogen gas generator	Puequ CO. LTD.	PNTN-2	Nitrogen gas cylinder can also be used instead of gas generator
UV-vis spectrometer	SHIMADZU	UV-1800	Used for optimization of cell density
Potentiostat	BioLogic	VMP3	Used for biofilm formation and kinetic isotope effect experiments
Thermal water circulator	AS ONE	TR-1A	Used for maintenance of temperature of electrochemical reactor
Faraday cage	HOKUTO DENKO	HS-201S	Used for electrochemical experiments
Anaerobic Chamber	COY	TypeB (Vinyl)	TO conduct experiments under anaerobic condition
Ultraclean DNA Extraction kit	MoBio		